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# COST, PRICES, AND PROFITS OF THE BITUMINOUS COAL INDUSTRY

BY DAVID L. WING  
*Washington, D. C.*

## I. COSTS

*Prewar statistics.*—Mr. Leshar has already referred you to the depressed condition in the bituminous coal industry during the years immediately preceding the war, which led to the request on the part of many operators for an investigation of the industry by the Federal Trade Commission in an effort to find remedies. The Rainey Resolution directing such investigation was passed by Congress in August, 1916. As soon as the Commission began its work, it encountered the greatest difficulty in getting at the facts, due to the backward state of cost accounting in the industry. In fact, at conferences held with operators at Chicago and Cleveland, in the fall of 1916, the Commission was urged by them to use its compulsory powers to establish, through a cost reporting system, a uniformity of cost accounting which, through its educational value, would promote stabilization in the industry. The Commission at that time felt itself unable to undertake such a step. About a year later, during the war emergency and after the passage of the Lever Act, and after the fixing of maximum prices for bituminous coal, and the establishment of the Fuel Administration to control the coal industry, the Commission, at the request of Dr. Garfield, did use its compulsory powers to install a monthly cost reporting system.

*Brief sketch of Federal Trade Commission's cost work.* Costs which were obtained directly from the operators' books by the Commission's own agents covered operators producing some 75,000,000 tons annually. Costs also were obtained through the monthly cost reporting system, and through data filed for 1916 and 1917 by operators in support of claims for revision of prices. The reasons for the installation of this system of cost reporting was to secure information on which governmental regulation of prices could be based. There were many difficulties encountered in installing the system. The burden placed on operators was especially heavy at the start. There was necessarily much delay in reporting; also there were difficulties met in the compilation and revision of the returns, after they had been collected. There has been criticism that changes of the cost forms were made from time to time by the Commission. The reason for such changes was that experience showed them to be highly desirable if the information collected was to meet the primary aim—to secure information needed for governmental regulation. There was also a secondary aim, which was to help the operator by furnishing him information that he needed con-

cerning conditions in the industry. For example, the wage increase, which Dr. Garfield was called to determine in November, 1917, showed the need for an absolutely clear distinction between labor and supply costs. While the 1917 form called for this distinction, many operators reported these two costs in combined form, and the 1918 form was altered to make the distinction much more clear. The value of this alteration in form was clearly evident when the information thus made available through the 1918 form was used by Dr. Garfield in the settlement of the November, 1919, strike. The 1919 form (never used) and the 1920 form (used for the reports from Jan.-June, 1920) were designed, not with the primary idea of governmental regulation, but of gathering and making public useful information, and at the same time placing as little a burden as possible on the reporting operator.

*Extent of bituminous cost work.* About 95 per cent of the soft coal tonnage mined from August, 1917, to December, 1918, was covered in Federal Trade Commission cost work. The chief divisions of cost (labor, supplies, general expense, making up total f.o.b. mine cost) together with sales realization, have been published in a series of six reports—No. 1 and Nos. 3-7 (No. 2 covered anthracite). In addition to showing detailed costs for 1918, for about 95 per cent of the tonnage, average costs are shown on a representative quantity of tonnage in a number of fields, for 1916, 1917, and 1918. Some 300 operators producing about 125,000,000 tons annually in 28 districts are included in these statistics. In the 1920 cost work, figures were obtained for a much smaller proportion of the total output. The 1918 statistics cover the costs of 2483 operators throughout the year. The January, 1920, bulletin covered returns from 1589 operators. When the bulletins were discontinued with the June number, the number of operators was 555.

*Nature of the Federal Trade Commission costs.* Information collected shows minor subdivisions of labor and supplies costs—grouped by nature of the mining operations such as mining, transportation, drainage, etc., and the chief subdivisions of general expense (or overhead) costs. Cost information published is in the nature of summaries showing labor cost, supplies cost, and general expense cost, the total of these three being the f.o.b. mine cost.

There are other factors than those enumerated above which are matters to be taken into consideration in price determination, but which are not definitely ascertainable from the monthly cost reports. They are largely matters either of study of the investment or of expert and professional judgment. The Federal Trade Commission has not yet undertaken, on an adequate scale, a study of the investment.

The costs shown by the Federal Trade Commission are not intended

to include any of the following items: reserves for uninsurable hazards, such as mine fires, floods, cave-ins, squeezes, strikes, or other similar causes contributing to destruction of property and idleness at the mines; extra cost development work done during the war and involving an increased risk in the recovery of the capital under a normal régime of prices of coal; selling expense, where a selling organization, other than the mine office force, is maintained in order to market the product; interest on the investment, including borrowed capital; allowances for income and excess profits taxes; profit on investment.

*Some cost generalizations.* It should be always kept in mind that each field has its own particular conditions, and that generalizations should be of a most guarded nature. It is possible, however, to point out a few general relationships which have been found to exist in the cost figures.

As a rule the labor cost forms from 70 to 80 per cent of the total f.o.b. mine cost, the supplies cost and general expense costs being about equal to each other. Despite the increases in cost from 1916 to 1918, these relationships seem to have been fairly constant. It is this relative steadiness of the three principal cost factors that is of great importance in throwing light on prewar conditions.

From the Federal Trade Commission, Quarterly Report No. 2, 1920, I quote the following figures, comparing costs for the first six months of 1920 with those of the same operators in 1918.

TABLE 1

GENERAL COMPETITIVE REGION	No. of Operators	1920		1918	
		Production Jan.-June	f.o.b. mine cost per net ton	Average 6 months Production	f.o.b. mine cost per net ton
Central Competitive Interstate (a)	131	tons 14,355,638	\$ 2.20	tons 17,285,504	\$ 1.83
Eastern Adjacent (b) ..	122	9,361,185	2.39	10,760,443	1.90
Western Adjacent (c)...	28	2,513,222	2.34	2,830,655	2.01
South'rn Appalachian (d)	51	4,904,907	2.70	5,017,686	2.24
Southw'st'rn Int'rstate (c)	71	2,603,594	3.19	3,208,933	2.61
Rocky Mountain (f)....	57	10,798,592	2.57	11,574,717	2.12
United States .....	460	44,537,138	2.45	50,677,938	2.01

(a) Includes all of Illinois, Indiana, Ohio, and the Southwest District of Pennsylvania.

(b) Includes all of Maryland, West Virginia, Virginia, and the Central District of Pennsylvania.

(c) Includes all of Michigan, Iowa, and District No. 1 of Kentucky.

(d) Includes all of Alabama, Tennessee, and Districts Nos. 2, 3, and 4 of Kentucky.

(e) Includes all of Missouri, Kansas, Arkansas, Oklahoma and Texas.

(f) Includes all of Colorado, New Mexico, North Dakota, Montana, Wyoming, Utah, and Washington.

## II. PRICES

*The nature of bituminous coal prices.* Coal prices are of two kinds—those which apply to coal sold under contract, and those which cover “spot” or market sales.

This fundamental difference must be kept in mind in all price discussions on bituminous coal. Coal contracts usually cover shipments over several months—often a year. As a rule, in mines east of the Mississippi River the contracts terminate on March 31, the end of the so-called “coal year.” Usually, but not always, “spot” prices are somewhat higher than contract prices for the product of the same mines, also the “spot” prices are subject to much greater fluctuations. The extreme fluctuation of “spot” prices may be judged from the following figures, compiled from Mr. Leshner’s report on Prices of Coal and Coke 1913-1918. The statistics are for the Pittsburgh field and the combined Somerset and Cambria fields in Pennsylvania, and for the combined New River and Pocahontas fields in West Virginia. They show low and high monthly prices and average.

TABLE 2

	1915			1916			1917		
	Jan.-Dec.			Jan.-Dec.			Jan.-August		
	Low	High	Avg.	Low	High	Avg.	Low	High	Avg.
Pittsburgh. . . . .	\$ .93	\$1.18	\$1.04	\$1.27	\$4.92	\$2.07	\$3.25	\$5.21	\$4.72
Somerset & Cambria. . . .	\$1.23	2.03	1.31	1.38	5.13	2.31	3.54	5.48	4.25
New River & Pocahontas .	\$1.12	1.29	1.22	1.24	5.30	2.13	3.48	5.34	4.56

The extreme range of these prices in 1916 and 1917 down to August 1917, when governmental price fixing took place August 21, 1917, is in sharp contrast to the 1915 ranges for the same fields.

It is usually estimated that the proportion of the total bituminous coal output which is sold under contract is from 70 to 80 per cent of the production. There are few published figures to rely on—and of course the proportion would vary widely from field to field—especially where a considerable part of the output goes into domestic use. It is highest where the output is almost wholly put to industrial use. The following statistics, taken from the Federal Trade Commission Cost Report No. 1—Pennsylvania Bituminous, show the result of an investigation made into the conditions in May, 1917, of 420 operators in seven counties of Central Pennsylvania. The statistics cover the sales realizations on 4,755,699 tons. This was disposed of as follows:—

Contract sales . . . . .81 per cent. . . . . \$2.43 avg. price per ton  
 “Spot” sales . . . . .19 per cent. . . . . 4.14 avg. price per ton

The operators are frequently charged, in times of scarcity of coal at points of consumption, with neglecting their contract obligations, in order to have more coal to sell at the extreme "spot" prices. There is considerable evidence that, at times, some of the less responsible operators have done this. However, such practices are not at all confined to the coal industry. Furthermore, the figures of actual sales realization, whenever gathered on a large scale, indicate that most of the operators are reasonably careful in carrying out their contracts. The public, however, seeing the extreme "spot" coal prices and not realizing how great a proportion of the output, at all times, moves under contract prices, is likely to misjudge the operator, and is prone to charge him with profiteering on the coal he has obtained through violation of contracts.

*The Fuel Administration price fixing.* The Fuel Administration in its price fixing had to keep in mind two objects: that production must be stimulated to the highest point allowed by the available transportation facilities for handling the output; and that the price must be not unduly burdensome in view of this requirement to promote production. The fundamental data on which the Engineer's Committee had to work was the cost information gathered by the Federal Trade Commission. This was studied by them and such adjustments made as they, in the light of their years of practical experience, judged were necessary. They had often to change the areas of the districts over which a uniform price was established. Their idea was, as far as possible, to group together mines which had a substantial similarity of operating conditions, especially such as affected costs. All the costs for a district were then plotted on a curve; and, when the final districting was complete, it would be found that the great majority of the costs—generally about 80 per cent—would be grouped within a narrow range, the upper limit of which was taken as the "bulk line" so-called. To this bulk line was added the necessary margin which was to provide for such expenses and contingences as were not covered in the cost figures, but should properly be considered in the fixing of prices, especially prices designed to stimulate production. On the figures thus reached, Dr. Garfield established his official prices.

The effect of the official prices, on production and on sales realization, varied greatly from field to field and from time to time. In some fields effect of the control exercised is much more evident than in others. In the Federal Trade Cost Reports this subject, besides being discussed in detail in connection with the statistics of the various districts, is summarized in the concluding chapter of Reports Nos. 4-7 under the heads of "Effect of Governmental Price Regulations on Sales Realiza-

tions" and "Effect of Margins on Production." The subject involves too much detailed analysis to discuss here.

*Course of the market after regulation was lifted.* About the only information on the prices of the early part of 1919, other than what can be arrived at for "spot" prices quoted in the coal trade journals, is the statistics furnished the Frelinghuysen Senate Committee by the National Coal Association. These prices collected by the Association from the operators' reports to it were reduced to run-of-mine basis. Twelve fields were covered. The prices, together with the last Fuel Administration price in effect for the field (prices in effect Jan. 31, 1919), are shown in the following table. These prices are practically "sales realization."

TABLE 3

Field	Fuel Administration Price in Effect Jan. 31	April	May	June	July	August
Pittsburgh . . . . .	\$2.35	\$2.32	\$2.32	\$2.35	\$2.37	\$2.47
Central Pa. . . . .	2.95	2.81	2.65	2.63	2.74	2.65
Northwest Pa. . . . .	2.95	2.52	2.40	2.56	2.31	2.45
Eastern Ohio . . . . .	2.35	2.23	1.90	2.05 (a)	1.89	2.15
Southern Ohio . . . . .	2.60	2.28	2.22	2.17 (b)	2.15	—
Southern Ill. . . . .	2.35	2.38	2.44	2.43	2.45	2.48
Central Ill. . . . .	2.35	2.16	2.15	2.15	2.17	2.17
Indiana . . . . .	2.35	2.21	2.16	2.18	2.16	—
Harlam Field Ky. . . . .	2.55	2.64	2.50	2.55	2.59	3.07
Hazard Field Ky. . . . .	2.55	2.48	2.56	2.46	2.30	—
Smokeless Fld. W. Va. . . . .	2.51	2.79	2.75	2.74	2.94	3.05
Northern W. Va. . . . .	2.50	2.39	2.34	2.27	2.21	2.46

a. Includes sales for Lake season.

b. Does not include railroad fuel estimated average \$2.00 per ton.

Of the above 12 fields it may be noted that in the case of three—the Harlam field in Kentucky, the Southern field in Illinois, and the Smokeless (New River and Pocahontas) field in West Virginia—the uncontrolled prices April-July were higher than the government prices of January 31.

The following figures show a comparison between the Fuel Administration prices of January 31 and the average. It will be noted that in but one field, Smokeless (W. Va.), was there an increase of over 10 per cent; in the case of four fields, the Southern (Ill.), the Harlam (Ky.), the Pittsburgh (Pa.), and the Hazard (Ky.) fields, there was little net change (less than 5 per cent advance or decrease). In the case of three fields there was a decline of 7 to 8 per cent, and in the case of three fields there was a decline of over 10 per cent.

Inasmuch as costs, because of the falling off of production, were probably as high or higher than during the previous year, it is difficult to see how the operators can be considered at this period (early in

TABLE 4

FIELD	Fuel Adm. price Jan. 31, 1920	Average price Apr.-July 1920	Increase or decrease
Smokeless (New River & Pocahontas, W. Va.)	\$2.51	\$2.80	I 12%
Southern (Ill.) .....	2.35	2.42	I 3
Harlam (Ky.) .....	2.55	2.57	I 1
Pittsburgh (Pa.) .....	2.35	2.34	D 1
Hazard (Ky.) .....	2.55	2.45	D 4
Indiana .....	2.35	2.18	D 7
Central (Ill.) .....	2.35	2.16	D 8
Northern (W. Va.) .....	2.50	2.30	D 8
Central (Pa.) .....	2.95	2.71	D 8
Eastern (Ohio) .....	2.35	2.02	D 14
Southern (Ohio) .....	2.35	2.20	D 17
North West (Pa.) .....	2.95	2.45	D 17

I—Increase.

D—Decrease.

1919) as having asked unreasonable prices for their product. It should be pointed out, in explanation of the increase in price for the Smokeless field, that this is the coal most in demand for export.

From the Federal Trade Commission Quarterly Report already cited, the following figures of sales realization are taken, showing a comparison of 1918 with the first six months of 1920.

TABLE 5

GENERAL COMPETITIVE REGION	No. of Operators	1920		1918	
		Jan.-June Production	Sales realization per net ton	Average 6 months Production	Sales realization per net ton
Central Competitive Interstate..	131	tons 14,355,638	\$ 2.68	tons 17,285,504	\$ 2.36
Eastern Adjacent.	122	9,361,185	3.12	10,760,443	2.63
Western Adjacent.	28	2,513,222	2.84	2,830,655	2.54
Southern Appalachian .....	51	4,904,907	3.37	5,017,686	2.74
Southwestern Interstate .....	71	2,603,594	3.47	3,208,933	3.00
Rocky Mountain ..	51	10,798,592	3.09	11,574,717	2.60
United States.....	460	44,537,138	3.00	50,677,938	2.56

### III. PROFITS

No information is now at hand to show to what extent operator, middleman, or retailer in the coal industry has, as a class, profited by exorbitant prices. Tonnage actually handled must be considered to determine this, since transportation difficulties have not affected all to the same degree.



No information on investment of sufficient definiteness and accuracy to be of scientific value is yet available. Obviously a detailed knowledge of the character and amount of the investment—which varies widely from field to field—is necessary to arrive at profits. Figures for the industry as a whole, such as appear in the U. S. Bituminous Coal Commission Report, which lump together returns from 1551 operators all over the country who represented about one-third of the coal tonnage produced in 1918, are not definite enough for practical use in connection with costs or prices of different fields.

While the margin between the sales realization and the f.o.b. mine cost, as compiled by the Federal Trade Commission, furnishes no exact measure of profit, and is likely to be misleading if an attempt is made to use it for comparison between fields—because of the wide difference in mining conditions, investment, and relative high or low cost of operation—yet it is of considerable value in throwing light on the changed conditions in a given field at different periods of time. For example, for the following eight important fields it was possible to get costs and sales realizations by months for part or all of 1916, as well as 1917 and 1918.

The margins for January-March, 1916; April-October, 1916; and November, 1916-March, 1917 (the period after the “spot” market began to rise violently, but before the 1916 contracts expired)—throw much light on the prewar situation which led to the passage of the Rainey Resolution in August, 1916. The 1918 output of the operators is stated to show that the figures can be considered representative.

TABLE 6

DISTRICT	Number of Operators	1918 Output	Jan.-Mar., 1916	April-Oct., 1916	Nov., 1916- Mar., 1917
Ill. District—2....	5	1,500,000	per ton —	per ton \$0.05 (a)	per ton \$0.44
Ill. District—3....	7	13,000,000	—	.08 (b)	.44
Ill. District—4....	2	2,250,000	.06	.01	.39
Ill. District—6....	13	12,000,000	—	.12	.68
Ind. Bituminous...	33	14,000,000	—	.07	.62
Mich. State .....	4	1,200,000	—	.16 (b)	.91
W. Va. Pocahontas	22	9,000,000	.32	.34	.67
W. Va. New River	10	2,500,000	.13	.23	.48
W. Va. New River	27 (c)	6,000,000 (c)	—	.22 (c)	.48 (c)

(a) May-Oct.

(b) July-Oct.

(c) Given for purposes of comparison with the figures of 10 operators in the same field.

The effect of the much more rapid increase of price over the increase in cost during November, 1916-March, 1917, is clearly evident by the increased margins.

Similar figures follow for 14 important districts (including the Pocahontas and New River fields also shown in the preceding table), the comparison in this case being of yearly margins for 1916, 1917, and 1918, and of the percentage which such margins form of each dollar of sales realizations.

TABLE 7

District	No. of operators	1918 Output	Actual margin per net ton			Proportion of each dollar paid by purchasers		
			1916	1917	1918	1916	1917	1918
			\$	\$	\$	%	%	%
Southwest Pa. . . . .	17	23,000,000	.17	1.12	.60	13	42	24
Central Pa. . . . .	33	9,000,000	.08	.92	.78	6	32	25
Maryland. . . . .	9	1,000,000	.33	1.06	.51	23	39	18
West Va. Pocahontas . .	22	9,000,000	.37	1.15	.89	30	49	35
Tug River . . . .	13	1,500,000	.23	1.19	.55	17	44	20
New River . . . .	10	2,500,000	.24	.95	.81	19	40	29
Ill. No. 1 . . . . .	10	2,250,000	.03	.33	.42	2	13	13
4 . . . . .	2	2,250,000	.10	.31	.40	9	19	19
Ohio 3 . . . . .	6	2,750,000	.21	.82	.55	15	36	21
5&9 . . . . .	5	4,750,000	.21	1.13	.86	17	46	33
8 . . . . .	14	7,500,000	.21	1.09	.68	23	49	28
6 . . . . .	12	1,750,000	.30	1.20	.73	20	42	25
Kentucky No. 3. . . . .	16	1,500,000	.19	1.11	.66	13	39	22
Tennessee No. 1. . . . .	15	1,300,000	.01	.74	.44	1	28	14

The low margins for periods prior to November, 1916-March, 1917, shown in Table 6 throw considerable light on the condition of the industry during most of 1916. The yearly margins for 1916 shown in Table 7 include the high prices of November and December, 1916, and do not as accurately reflect conditions prior to 1916. The deduction, however, to be made from both tables indicates that the margin at that time formed but a relatively small part of the price paid by the purchaser. The principal component of the f.o.b. mine cost, as has been already pointed out, is the labor cost, which usually forms about 70 to 80 per cent. This labor cost is principally affected by changes in the wage scale, though it also is to some degree affected by changes in the tonnage produced. And, forming as it does the predominant item of cost, it has, in normal competitive conditions, a very direct effect on the prices asked, and hence on the sales realizations. The increase made in wages for a number of years prior to the war were relatively slight, so that their effect on prices was not marked. As a result the sales realization remained fairly constant from year to year. This may be deducted from the "average value" figures compiled from Geological Survey reports for four important eastern fields.

TABLE 8

	Southwest Pa. average value	Central Pennsylvania	New River West Virginia	Pocahontas West Virginia
1911	\$1.01	\$1.01	\$ .95	\$ .92
1912	1.04	1.05	1.00	.97
1913	1.13	1.11	1.08	1.08
1914	1.06	1.07	1.10	1.08
1915	1.03	1.06	1.06	1.06
1916	1.28	1.30	1.25	1.19

The "average values" are not exactly the same as "sales realizations," since they include allowance for the estimated value of the coal used for power-house fuel at the mines. The actual "sales realizations" would be found to have been a few cents higher than the "average values" shown above.

It is evident from the slight changes in labor cost which took place from 1911-1915 inclusive that the conditions prior to November, 1916, had existed for several years. And while the picture of the alleged conditions in the industry set forth in the Rainey Resolution may have been overdrawn in some particulars, the evidence is overwhelming as to the general state of depression and demoralization of the coal industry at that time. This resolution is as follows:—

#### RAINEY RESOLUTION AUGUST, 1917

(House Resolution 352, Sixty-fourth Congress, first session.)

Whereas it is alleged that unfair methods of competition are widely practiced in the bituminous coal mining industry of the United States; and

Whereas it is alleged that in consequence thereof the industry in many districts has been demoralized financially and numerous operating companies have been forced into receiverships; and

Whereas it is also alleged that in consequence thereof some 200,000,000 tons of coal are permanently lost to the Nation each year by unwise and improvident methods of mining; and

Whereas it is further alleged that in consequence thereof some 500,000 employees at the mines are kept idle from one fourth to one third of the working time, with much ensuing hardship and loss to themselves and those dependent upon them; and

Whereas such conditions, if existing in the bituminous-coal industry, vitally touch the interests and welfare of the public as a whole: Therefore, be it

*Resolved*, that the Federal Trade Commission be, and is hereby, directed to begin and make inquiry immediately into the conditions in the production and distribution of bituminous coal and to report the facts to Congress with recommendations.

### III. CONCLUSION

To be of practical value in the solution of the coal problems, the statistics of costs, prices, and profits, must relate to small, fairly homo-

geneous areas. The diversity of conditions found to exist between different fields in the same state (not to mention between mines in the same field) is such as to militate against broad generalizations. In a relatively few particulars can generalizations covering any large portion of the industry have even any theoretical value—and even in those caution must be used if their application to the problems of a particular field is in question. In view of the present trend of public opinion in calling on federal and state government for legislative and executive action, which affects the public utility aspects of the coal industry, and restricts the free play of such economic factors in production as the relations between employer and employed in regard to ways and conditions of employment, and in distribution such as control over the disposition of the product to different classes of purchasers, and the regulation of prices which may be changed, it is evident, that for the benefit of all concerned—whether operator, laborer, or consumer—there should be the fullest possible definite, detailed, impartial, authoritative information available alike to all, so that any constructive action contemplated either along the lines of legislative enactment or voluntary co-operation can be considered in the light of a full knowledge of present conditions.